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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 16151.12-2008

Replacing GB 16151.12-1996

**Technical requirements for the operating safety of agricultural
machinery - Part 12: Grain combine harvesters**

农业机械运行安全技术条件 第12部分：谷物联合收割机

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Foreword

In this Part, 3.1, 3.3, 3.9, 3.11 ~ 3.22, 4.2, 4.4, 4.5, 7.2 ~ 7.9, 9.1, 9.4, 9.5, 10.1, 10.2, 10.5, 11.1, 11.2, 12.2,

12.5 are mandatory, and the remaining clauses are recommended. GB 16151 Technical Requirements of Operating Safety for Agricultural Machinery includes the following parts:

---Part 1: Tractor;

---Part 5: Trailer;

---Part 12: Grain Combine-harvester. This is Part 12 of GB 16151. This Part is an amendment of GB 16151.12-1996. In comparison with GB 16151.12- 1996, the main technical content has the following differences:

---The requirements for the instructional manual, engine number and frame number are added;

---The requirements for the operator's operating position are added;

---The stipulations of the steering wheel, operating device and cab are added;

- The stipulations of the operating platform and seats are added;
- The stipulations of other types of ladders and platforms are added;
- The stipulations of safety signs for the grain tank are added;
- The requirements for the number plate holder are added;
- The requirements for warning signs for device failures are added;
- The technical requirements irrelevant to safety are deleted. Starting from the date of implementation, this Part shall serve as a replacement of GB 16151.12-1996. In this Part, Appendix A is informative. This Part was proposed by the Ministry of Agriculture of the People's Republic of China. This Part shall be under the jurisdiction of National Technical Committee on Agricultural Machinery of Standardization Administration of China. Technical Requirements of Operating Safety for Agricultural Machinery - Part 12: Grain Combine-harvester

1 Scope

Part 12 of GB 16151 sets the operating safety requirements for grain combine harvesters - the machine that concentrates more moving hazards than any other on a farm: the header and reel, the threshing drum, the augers and the straw walkers, all driven from one engine and all reachable by a person clearing a blockage. The standard covers the engine, transmission, steering and braking systems, the guarding of the working elements, the lighting and signalling, and the operating condition required for the machine to be used. Note that it carries a 2009 amendment, GB 16151.12-2008/XG1-2009. Issued on 4 July 2008, in force since 1 January 2009, replacing GB 16151.12-1996. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the edition it replaces are taken from there. The clause text, the tables and the numeric limits are not reproduced on this page - they are in the document itself, which is delivered in full in English translation.

This Part of GB 16151 specifies the operating safety-related technical requirements for the complete machine of grain combine-harvester (hereinafter referred to as the harvester), and its engine, transmission system, steering system, braking system, frame and running system, header, threshing part, grain tank, grass collecting box, chaff collecting box, as well as stalk chopper, cab, outer cover, hydraulic system, lighting and signaling device. This Part is applicable to the technical inspection of operating safety of the harvester.

2 Normative References

Through the reference in this Part of

GB 16151, the clauses of the following documents become clauses of this Part. In terms of references with a specified date, all the subsequent modification sheets (excluding the

corrected content) or revised versions are not applicable to this Part. However, the various parties that reach an agreement in accordance with this Part are encouraged to explore the possibility of adopting the latest version of these documents. In terms of references without a specified date, the latest version is applicable to this Part.

GB 4785 Prescription for Installation of the External Lighting and Light-signaling Devices for Motor Vehicles and Their Trailers (

GB 4785-2007, ECE R48:2001, NEQ)

GB 10395.1 Tractors and Machinery for Agriculture and Forestry - Technical Means for Ensuring Safety - Part 1: General (GB 10395-2001, eqv ISO 4254-1:1989)

GB 10395.7 Tractors and Machinery for Agriculture and Forestry - Technical Means for Ensuring Safety - Part 7: Combine Harvesters; Forage and Cotton Harvesters (GB 10395.7-2006, ISO 4254-7:1995, MOD)

GB 10396 Tractors, Machinery for Agriculture and Forestry, Powered Lawn and Garden Equipment - Safety Signs and Hazard Pictorials - General Principles (GB 10396-2006, ISO 11684:1995, MOD)

3.16.1 The structure of the ladder shall not have any parts or protrusions that would cause injuries. The handrails and pedals of the ladder shall have a reliable strength; the surface of the pedals shall be non-slippery. The various parts shall be reliably fixed.

3.16.2 The height from the upper plane of the first step of the ladder to the ground shall be not greater than 550 mm; the interval among the pedals shall be not greater than 300 mm. Under special circumstances (rice harvester, crawler walking wheel or tilt compensation mechanism), the height of the lowest step of the ladder from the ground may be greater than 550 mm, but shall not exceed 700 mm.

3.16.3 The gradient of the ladder shall be such that when you descend from the ladder, you can see the outer edge of the next step of the ladder when you look down.

3.16.4 When the ladder moves upwards or downwards, it shall not cause squeezing, or impact the operator or the attendees.

3.16.5 The depth of ladder pedal (the interval between the front edge of the step and the adjacent parts): if there is a closed damper behind the ladder, then, the depth shall be not less than 150 mm; if there is no closed damper, then, the depth shall be not less than 200 mm. The depth of the steps of other get-on passages shall be not less than 150 mm.

3.16.6 The interval between the pedal of the ladder to the tyre shall be not less than 25 mm. The radial free clearance between the driving wheel and the upper part shall be not less than 60 mm.

3.16.7 Handrails shall be provided on both sides of the ladder, so as to maintain the operator in contact with the ladder at 3 points. The cross-sectional diameter of the handrails

shall be between 25 mm ~ 35 mm; the height of the lowest end of the handrails from the ground shall be not greater than 1,600 mm. The rear side of the handrails shall have a minimum clearance of 50 mm. A gripper shall be set at a height of 1,000 mm from the highest step of the ladder; the length of the gripper shall be at least 150 mm.

7 Braking System

7.1 The brake pedal shall be non-slippery. The left and right pedals shall have a reliable interlocking device and positioning device.

7.2 The operation of the brakes shall be smooth, sensitive and reliable. The braking capacities of the brakes on both sides shall be basically the same; the pedal surfaces of the left and right pedals shall be on the same plane.

7.3 The free stroke of the brake pedal shall comply with the stipulations of the technical documents.

7.4 After the brake pedal or the handle generates the maximum braking effect, more than one fifth of the reserve stroke shall be left.

7.5 The oil level of the hydraulic braking system shall be normal; the oil shall be qualified; there shall be no oil leakage or air intake.

7.6 The operating force of the brake pedal shall be not greater than 600 N; the operating force of the brake handle shall be not greater than 400 N.

7.7 The parking brake shall ensure that the harvester can be reliably parked upwards or downwards on a longitudinal dry ramp with a gradient of 20% for the wheel type and a gradient of 25% for the chain type, for a duration of greater than 5 min.

7.8 When the wheel-type self-propelled harvester runs in the transportation state at a speed of 20 km/h (when it is lower than 20 km/h, the highest speed of the machine shall be subject to) on dry and flat concrete or asphalt roads, its braking distance S shall comply with the following stipulations: device.

9.5 The bolts at the junction of the header or header trailer and the main engine shall have measures to prevent falling off.

10 Threshing Part

10.1 The grain rods and spokes of the roller shall manifest no cracks.

10.2 After A-shaped grain rod is installed, the head of the bolt shall not be higher than the convex pattern; the bolt of the grain rod shall be reliably fastened.

10.3 The roller shaft shall not be bent; the roller shall flexibly rotate, and without axial movement.